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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,310	11/17/2003	Don Dinn	RID10038P0010US	5092
32116	7590	04/28/2006	EXAMINER	
WOOD, PHILLIPS, KATZ, CLARK & MORTIMER 500 W. MADISON STREET SUITE 3800 CHICAGO, IL 60661			RUTLAND WALLIS, MICHAEL	
			ART UNIT	PAPER NUMBER
			2835	

DATE MAILED: 04/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/715,310

Applicant(s)

DINN ET AL.

Examiner

Michael Rutland-Wallis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Canada on 04/02/2003. It is noted, however, that applicant has not filed a certified copy of the CA 2,418,387 application as required by 35 U.S.C. 119(b).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 19 and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 19 contains the limitation "the transmitter is 10 meters distant from said receiver" and the limitation "the transmitter is 100 meters distant from said receiver" therefore it is not clear what distance the transmitter is from the receiver.

Claims 11 and 31 recite the limitation "said delay circuit". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-8, 15-19, 21, 24-28, 35-39, 41-43 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodall et al (U.S. Pat. No. 6,253,679) in view of Sharpe et al. (U.S. Pat. No. 5,621,412)

With respect to claim 1 and 41 Woodall teaches a system for remotely activating a deployed device (item 10), the deployed device having a load (explosive charge) and a battery (item 57), the system comprising: a transmitter (item 25), remote from the deployed device, for generating an AC magnetic field; and a receiver (item 20b) disposed at the deployed device, the receiver including an antenna (item 25). Woodall teaches a high-gain narrow band filter amplifiers connected to the antenna for sensing the AC magnetic field and generating an output signal in response to the sensed AC magnetic field, while not disclosed as a voltage detector, it is disclosed to detect changes in AM signals or induced voltage from the antenna, it is well know in the art to detect voltage levels of incoming signals see for example Sharpe (column 28 lines 26-55) teaches voltage detection circuitry for detecting incoming signals, it would be an obvious modification to Woodall to detect the incoming induced voltage level if it is held this is detection is not present in Woodall in order to properly identify the signal while

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reducing power output. Woodall goes on to disclose a switch (item 22 interface and control logic and/or power output stage) coupled in series with the load and the battery, said switch being responsive to said output signal to couple the battery to the load, thereby activating the deployed device.

With respect to claims 4, 24 and 42 Woodall as modified by Sharpe teaches voltage detector only generates said output signal when the sensed AC magnetic field induces a voltage in said antenna and said voltage exceeds a threshold voltage, see figure 19 of Sharpe where, when the voltage at the comparator is not above a threshold an output is not generated.

With respect to claims 5, 16, 25 and 43 Woodall as modified by Sharpe teach the voltage detector includes at least one semiconductor device, said semiconductor device having a cutoff mode and an active mode (for example transistors within the comparator), and wherein said semiconductor device operates in said cutoff mode when said induced voltage is below the threshold voltage, and operates in said active mode when said induced voltage is above the threshold voltage.

With respect to claims 6-7 and 26-27 Woodall teaches voltage detector includes a rectifier and an amplifier, and said amplifier produces said output signal, see item 26 in fig. 2 of Woodall. As rectification and amplification components are commonly used in receiver circuitry.

With respect to claims 8 and 28 Woodall as modified by Sharpe does not address the circuitry of the filter and voltage detection circuit at a component level

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however the use of base emitter junction of a transistor in rectification of oscillating signals is commonly seen in the art.

With respect to claims 15, 17, and 35-37 Woodall teaches the switch may be implemented using MOSFETs (column 6 line 20) for example, further control logic is well known to be implemented using semiconductor elements.

With respect to claim 18-19 and 38-39 Woodall is silent on a discrete distance between the transmitter and the receiver, however the transmission between the LCAC and explosives is understood to at least 100 meters in order to provide a safe distance from the explosives.

With respect to claim 21 Woodall is silent the operating modes of active and standby however when the switching logic is in a open state less power is consumed therefore one of ordinary skill in the art may consider this condition a standby state or mode and when the switching logic is closed more power is consumed, where one of ordinary skill in the art may consider this condition an active state or mode. Sharpe also teaches standby or sleep states and active or awake states.

With respect to claim 45 Woodall as modified by Sharpe 11 teaches item 26 or 51 said voltage detector means includes rectifier means for rectifying the induced voltage in said antenna to produce a rectified signal, and amplification means for amplifying said rectified signal to produce said output signal.

With respect to claim 46 Woodall as modified by Sharpe 11 teaches rectifier means includes means for preventing production of the rectified signal unless the induced voltage exceeds the threshold see the comparator of Sharpe.

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Claims 2-3, 20, 22-23, 40 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodall et al (U.S. Pat. No. 6,253,679) in view of Sharpe et al. (U.S. Pat. No. 5,621,412) in further view of Colarossi et al. (U.S. Pat. No. 6,011,439)

With respect to claims 2-3 and 22-23 Woodall teaches the AC magnetic field has a predetermined frequency (column 8 line 30-40). While Woodall teaches does not teach tuning the antenna it would have been obvious to one of ordinary skill in the art at the time of the invention to use a tuned antenna in order to provide better reception of the transmitted signal as seen for example in Colarossi (see claim 3 for tuned antenna teaching)

With respect to claims 20, 40 and 44 Woodall does not teach said receiver consumes less than 100 nW of power when said switch is open. Colarossi teaches a low power amplifier. Woodall as modified by Sharpe teach the reduction and saving of power when in a sleep or standby state is at a minimum power state. It would have been obvious to one of ordinary skill in the art at the time of the invention to use such a low power amplifier in the device of Woodall as modified by Sharpe in order to reduce the power consumed when the switch is open to less than 100nW.

Claims 9-14 and 29-34 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable Woodall et al (U.S. Pat. No. 6,253,679) in view of Sharpe et al. (U.S. Pat. No. 5,621,412) in further view of Fryer (U.S. Pat. No. 3,621,290)

With respect to claims 9 and 29 Woodall as modified by Sharpe teaches the device of claim 4 but do not teach the component layout as claimed. Fryer teaches the connection of a first transistor having its base-emitter junction coupled in parallel with

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said antenna, and a second transistor having its base coupled to the collector of said first transistor, and wherein the collector of said second transistor is coupled to said switch and provides said output signal is commonly seen in transistor logic reception see for example figure 3. It would have been obvious to one of ordinary skill in the art at the time of the invention to use such a configuration of transistors to provide low power consumption when no signal is present and fast switch on time when a signal is received.

With respect to claims 10 and 30 Woodall as modified by Sharpe provide circuitry for receiving signals, which the components themselves delay the signal before arriving at the switch such as the resistance, which it appears applicant is referring.

With respect to claim 11, 31 and 47 Fryer teaches the delay circuit includes an averaging said output signal with an output resistor and an output capacitor.

With respect to claim 12 and 32 Fryer teaches the emitter of said first transistor is coupled to a terminal of the battery and the emitter of said second transistor is coupled to an opposing terminal of the battery, see fig. 3 of Fryer.

With respect to claim 13-14 and 33-34 Fryer teaches first transistor is an NPN transistor and said second transistor is a PNP transistor. The claimed configuration of the claim 14 and 34 is an obvious logic variant to that of claim 13 the use of BJTs is seen in Fryer the type of BJT used in the circuit may be selected for a variety of reasons by the designer the such as cost supply.

### ***Conclusion***



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rutland-Wallis whose telephone number is 571-272-5921. The examiner can normally be reached on Monday-Thursday 7:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MRW

  
LYNN FEILD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800